

Murtaugh Bridge  
Murtaugh Vicinity  
Jerome County (to Twin Falls County)  
Idaho

HAER No. ID-1

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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

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HISTORIC AMERICAN ENGINEERING RECORD

MURTAUGH BRIDGE

Location: The Murtaugh Bridge spans the Snake River approximately 0.8 miles Northeast of Murtaugh, Idaho.

Date of Construction: Constructed in 1915-1916 by Charles H. Mull.

Present Owners: Hillsdale Highway District  
Hazelton, Idaho  
Murtaugh Highway District  
Box 147 Murtaugh, Idaho

Present Use: Vehicular bridge for cars and farm to market product trucks. Very little current farm to market activity due to current load restrictions.

Significance: The primary area of significance is the age of the structure in relation to the age of the surrounding communities. The bridge is a Pratt Truss.

Historian: Gerald L. Martens, P.E.  
Edwards, Howard, and Martens, Inc.  
July, 1980

Transmitted By: Monica E. Hawley, Historian, 1983.

Magic Valley, located in Southern Idaho within the area identified as the Snake River Plateau, is bisected by the Snake River, the primary source of irrigation water for development of the adjacent agricultural area. The Snake River, with its waters providing the necessary waters for development of the adjacent plateaus, provided a distinct obstacle to inter-valley travel and economic growth. The river obstacle is significantly accentuated by vertical canyon walls prevalent through most of Magic Valley.

Prior to construction of Milner Dam, 1903-1905, the only river crossing were ferries located at Blue Lakes and Shoshone Falls 18 and 14 miles respectively, downstream from the Murtaugh Bridge site.

North - South travel at the East end of Twin Falls County received very little emphasis until development of the Minidoka Projects, North of the Snake River, began to develop. Murtaugh, a nearby market with railroad facilities became increasingly interested in providing an economic base for the adjacent developing area.

The demand for river crossings, especially rim to rim crossings, became increasingly intense with bridge locations and types having a major influence on the local elections of 1912; and in 1914, bridge proponents for various local prejudicial reasons were aligning with proposed bridges at Shoshone Falls, North of Hansen, and North of Murtaugh.

Twin Falls County Commissioners, under intense pressure and attempting to satisfy all commissioner districts, adopted a bridge plan consisting of bridges at all three locations with the Hansen and Murtaugh locations to provide rim to rim facilities. This overly ambitious plan was based largely upon use of convict labor for labor forces and assistance from Northside political jurisdictions. However, convict labor was not practical or available for bridge construction, and the Northside communities were not sufficiently developed to provide the necessary tax base. Also, Northside residents felt that Twin Falls residents

would be the primary beneficiaries of the bridges. As a result of the commissioners facing economic realities, the projects continued to be political subjects while only minor preparatory work was accomplished.

Convict labor was utilized in reconstruction of approach grades to the Shoshone Falls site. At one time, as many as 300 convicts were camped at the Shoshone Falls site and annually excavating and hand placing rock fill for the grades and retaining walls. Much of this work is still in use for access to the Shoshone Falls Park and Idaho Power power plant.

Scheduled for transfer to the Murtaugh Project following completion of the Shoshone Falls Road, the convict work party was transferred to other Idaho projects as a result of political priorities arising from the 1914 elections. Records indicate that only minor convict efforts, if any, were utilized on the Murtaugh Project.

Various practical, outlandish, or irrational proposals were promoted as alternates or variations of the bridge crossings. These included different cable ways, cable stayed towers and a number of variations of cable supported bridges.

Several bridge plans were prepared by various bridge contractors hoping to obtain an advantage in obtaining a contract for construction of the bridges. Many such designs were motivated by interested investors evaluating the opportunity for a profitable toll facility. These toll facilities would have been largely dependent on freight companies for revenue. The railroad, however, offered increasingly low freight rates via Burley and Minidoka to delay construction of any such toll facility to compete with their system.

In July, 1915, the Twin Falls County Commissioners again reaffirmed their commitment to the Hansen and Murtaugh facilities with no mention of the Shoshone Falls site. Following additional public pressure, the Commissioners proclaimed on September 14, 1915, that both crossings would be rim to rim. This was in conflict with previous preliminary work that had been completed at the Murtaugh site by convict crew or County indigent crews

On October 19, 1915, an injunction was obtained in District Court by county residents to stop design or further action concerning any bridge by the Hillsdale Highway District participants in the Hansen and Murtaugh Bridges.

On November 12, 1915, following extensive negotiations and compromises, an agreement was reached which included construction of the Murtaugh Bridge at the existing site, much below the rim. The agreement included resignation of two commissioners described as "obnoxious" in several newspaper editorials. The revised design reduced the estimated cost to a small percentage of earlier estimates and allowed design to proceed within available funds.

On December 21, 1915, bids were opened for the project utilizing plans modified from earlier prepared plans. A total of seven bids were received ranging from \$7,975 to \$8,869. The low bid, submitted by Charles H. Mull, was accepted following considerable discussion concerning all bids exceeding preliminary estimates prepared by C. H. Mull who is also identified as Project Engineer.

The increased costs were attributed to inflating steel prices as a result of the outbreak of World War I in Europe.

Roadways descending into the canyon were constructed by Gus D. Johnson. Final approaches and some abutment work was done by the County and Highway District.

Bridge construction began in Spring of 1916, and was accepted by the Twin Falls County Commissioners and Hillsdale Highway District in November, 1916.

"Bridge Day", a community dedication ceremony and celebration, was held on December 9, 1916. Ceremonial reports heralded the bridge as a tie between Twin Falls County and Northside Developments.

## EXISTING BRIDGE - TECHNICAL NARRATIVE

The existing Murtaugh Bridge consists of 6 spans (4 @ 17 feet and 2 @ 102 feet). The Bridge total length, including abutments, is 281 feet with a total width of 16 feet.

The approach spans (17 feet spans) consist of 8" x 4" wide flange beams at 31 inches on center with 3" x 8" timber stringers bolted to alternate steel stringers. The stringers are supported by a 12" x 5" wide flange floor beam spanning 12' - 6" between columns constructed from two 7" x 2" channels connected by lattice bracing. The columns are cross braced by diagonals constructed from two 2 1/2" x 3" angles connected by lattice bracing. The columns bear on concrete footings of varied height and dimensions. Several of the footings have been recently reconstructed to keep the Bridge in service.

The Bridge traffic surface consists of 3" x 12" transverse decking supporting 3" x 12" running planks. The decking is periodically bolted or lagged to the 3" x 8" stringers with the running planks bracing nailed to the decking.

The North abutment is moderately high (16 feet) with parallel wingwalls approximately 12 feet long. The South abutment consists only of a concrete sill resting in the canyon wall rock without wingwalls.

The two main spans (102 feet each) consist of 6 - 17 foot panels forming a deck truss. The truss supports a deck structure identical to the approach spans. The truss is 18 feet deep and 12 foot 6 inches wide. The top chord consists of two 7" x 2" channels connected by lattice bracing. The bottom chord consists of two 3" x 3" angles. Verticals consist of two channels or two angles depending upon location. Diagonals are two channels connected by lattice work.

The center pier is constructed of concrete bearing in native rock with flood channel. The top of the concrete pier is 18 feet below the bottom of the truss. A steel frame with posts constructed of 7" x 2" channels supports the truss and bears on bearing plates resting on the concrete pier.

All bearing points are steel bearing plates with four anchor bolts cast in the concrete. No supports are designed to accomodate rotation or movement. The structure does not provide for any longitudinal movement or expansion.

Evaluation of member capacity indicates that the Bridge was designed for loads of approximately equivalent to H-10 live loads. No plans for the Bridge are available and highway commissioners with 40 years service do not recall having seen any plans. Whereas the design was prepared by the building contractor, it is probable that the design lacked detail and may have been modified during construction due to material shortages.

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